



# 2011 Annual City of Jacksonville Drinking Water Quality Report

PWS ID# 04-67-010 Report issued June 2012



We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies.

## What the EPA Wants You to Know

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Jacksonville is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and radiological contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

## When You Turn on Your Tap, Consider the Source

The City of Jacksonville draws its water from aquifers located deep underground. The City's water is obtained from two groundwater sources. The first source is comprised of two well fields, one located off Gum Branch Road, and the other off Highway 258. Both well fields are located near Richlands, North Carolina. The 15 wells draw their water from the Upper and Middle Cretaceous Sand Aquifers. This ground water requires no treatment other than the addition of chlorine for disinfection. It contains natural fluoride, essential for dental health, and is naturally soft. The second source consists of 20 wells in the Castle Hayne aquifer. This is a shallower aquifer that produces good quality water, and is treated at the City's Nano-filtration plant.



## Free Water Conservation Kits

Available at City Utilities Billing In City Hall

## Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for the City of Jacksonville was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area.). The assessment findings are summarized in the table below:



Susceptibility of Sources to Potential Contaminant Sources (PCSs) - SWAP Date March 2011

Lower Susceptibility Rating		Moderate Susceptibility Rating	
Well #3 - 258 Plant	Well #12 - Gum Branch	Well #1 - 258 Plant	Chaney's Creek #1
Well #4 - 258 Plant	Well #13 - Gum Branch	Well #2 - 258 Plant	Chaney's Creek #2
Well #5 - 258 Plant	Well #17 - Gum Branch	Well #6	Common's North #1
	Well #18 - Gum Branch	Well #7	Common's North #2
		Well #11 - Gum Branch Plant	Common's South #1
		Well #14 - Gum Branch	Common's South #2
		Well #15 - Gum Branch	Business Park #1
		Well #16 - Gum Branch	BusinessPark#2

### More about the Source Water Assessment Program

The complete SWAP Assessment report for the City of Jacksonville may be viewed on the Web at: <http://www.deh.enr.state.nc.us/pws/swap> Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email request to [swap@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name, PWSID, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-715-2633.

It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the systems' potential to become contaminated by PCS's in the assessment area.

### What If I Have Any Questions Or Would Like to Become More Involved?

If you have any questions about this report or concerning your water, please contact the Public Services Department at 910 938-5233. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of the Water and Sewer Advisory Board's regularly scheduled meetings. Meetings are held bi-monthly at City Hall.



### Water Quality Data Table of Detected Contaminants

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2011 The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Synthetic Organic Contaminants and unregulated SOC contaminants were sampled in 2011, and results of those analyses were all below detection limits. Volatile Organic Compounds were sampled in 2010.

## Important Drinking Water Definitions:

**Not-Applicable (N/A)** – Information not applicable/not required for that particular water system or for that particular rule.

**Non-Detects (ND)** - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

**Parts per million (ppm) or Milligrams per liter (mg/L)** - One part per million corresponds to one minute in two years or a single penny in \$10,000.

**Parts per billion (ppb) or Micrograms per liter (ug/L)** - One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**Picocuries per liter (pCi/L)** - Picocuries per liter is a measure of the radioactivity in water.

**Action Level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG)** - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.



## Water Quality Data Table of Detected Contaminants

### See Definitions Section

#### Microbiological Contaminants 2011 - 50 Monthly samples

Contaminant (units)	MCL Violation	Your Water	MCL Goal	Maximum Contaminant Level	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	No	0	0	5% of monthly samples are positive	Naturally present in the environment
Fecal Coliform or E. coli (presence or absence)	No	0	0	0 (Note: The MCL is exceeded if a routine sample & repeat sample are total coliform positive, & one is also fecal coliform or E. coli positive)	Human and animal fecal waste

#### Nitrate/Nitrite Contaminants December 2011

Contaminant (units)	MCL Violation	Jacksonville Water	Range Low-High	Maximum Contaminant Level Goal	Maximum Contaminant Level	Likely Source of Contamination
Nitrate (as Nitrogen (ppm))	No	<1.0	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

#### Lead and Copper Contaminants

Contaminant (units)	Sample Date	Jacksonville Water	% of sites above the AL	Maximum Contaminant Level Goal	Maximum Contaminant Level	Likely Source of Contamination
Copper (ppm) (90th percentile)	2011	0.098	0%	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90th percentile)	2011	4	1%	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

#### Radiological Contaminants

Contaminant (units)	Sample Date	MCL Violation	Jacksonville Water	Maximum Contaminant Level Goal	Maximum Contaminant Level	Likely Source of Contamination
Alpha emitters (pCi/L)	2011	No	<3.0	0	15	Erosion of natural deposits
Beta/photon emitters (pCi/L)	2011	No	6.1	0	50*	Decay of natural and man-made deposits
Combined radium (pCi/L)	2011	No	<1	0	5	Erosion of natural deposits
Uranium (pCi/L)	2011	No	<0.67	0	20.1	Erosion of natural deposits

\* Note: The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

# Water Quality Data Table of Detected Contaminants, cont.

See Definitions Section



## Disinfectants and Disinfection Byproducts Contaminants – Stage 1

Contaminant (units)	MCL/ MRDL Violation	Jacksonville Water (AVG)	Range Low-High	Maximum Contaminant Level Goal	Maximum Contaminant Level	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	No	43	31 - 70	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	No	7	4 - 14	N/A	60	By-product of drinking water disinfection
Chlorine (ppm)	No	0.76	0.20– 1.97	MRDLG = 4	MRDL = 4	Water additive used to control microbes

## Inorganics Contaminants March 2011

Contaminant (units)	MCL/ MRDL Violation	Jacksonville Water (AVG)	Range Low-High	Maximum Contaminant Level Goal	Maximum Contaminant Level	Likely Source of Contamination
Antimony (ppb)	No	<3	<3 - <3	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	No	<5	<5 - <5	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	No	<0.40	<0.40 - <0.40	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium (ppb)	No	<2	<2 - <2	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	No	<1	<1 - <1	5	5	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Chromium (ppb)	No	<20	<20 - <20	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide (ppb)	No	<50	<50 - <50	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride (ppm)	No	1.1	<0.6 - <1.9	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Mercury (inorganic) (ppb)	No	<0.04	<0.04 - <0.04	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Selenium (ppb)	No	<10	<10 - <10	20	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium (ppb)	No	<1	<1 - <1	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

## Contaminant

Contaminant (units)	Proposed MCL	Jacksonville Water (AVG)	Sample Date
Sulfate (ppm)	250	<15	3/2008

